

REMARKS

Claims 1, 3-15, and 17-19 are pending in the application. Claims 2, 16, 20-25, and 34 have been previously cancelled. Claims 26-33 and 35 have been previously withdrawn. Claim 1 has been amended to incorporate wording suggested by the Examiner to address an objection to claim 1. Additionally, claim 1 has been amended to more particularly point out and claim the invention by clarifying that the invention comprises a polymer additive selected from a group consisting of oligomeric ABA-glycidyl methacrylate diester and oligomeric amine-terminated poly(acrylonitrile-co-butadiene), as well as mixtures containing these compounds. Claim 19 has been amended to incorporate language suggested by the Examiner to address an objection to claim 19.

Applicants respectfully submit that: (1) no new matter has been added to the application by the amendment; (2) the amendment resolves all issues raised by the Examiner in the final Office Action of May 21, 2007; (3) the subject matter of the amendment already has been included in the Examiner's search and therefore does not require the Examiner to perform a new search; (4) the amendment places the application in condition for allowance or in better condition for appeal; and (5) the amendment does not result in a net addition of claims to the application. Applicants respectfully request that this Amendment After Final Rejection be entered in accordance with 37 C.F.R. §116 and M.P.E.P. 714.13.

Claim Objections

The Examiner has objected claims 1, 3-15, and 17-19, and particularly to the wording of claims 1 and 19. In view of the Examiner's comments, Applicants have amended claim 1 to recite "oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof" as suggested by the Examiner. Further, Applicants have amended claim 19 to recite "oligomeric ABA-glycidyl methacrylate diester" as suggested by the Examiner. Applicants respectfully submit that with these amendments, the objections raised by the Examiner have been addressed. Accordingly, Applicants respectfully request that the objections to claims 1, 3-15, and 17-19 be withdrawn.

Claim Rejections – 35 U.S.C. § 102 – claims 1, 3, 6, 7, 14, 15, 17, and 18

The Examiner has rejected claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,700,581 (Sachdev *et al.*, hereinafter “Sachdev ‘581”). In view of the amendment of claim 1, Applicants respectfully traverse these rejections of claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. § 102(b).

Claim 1 has been amended to recite, *inter alia*:

...

... said polymer additive is selected from the group consisting of **oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof.** (Emphasis added.)

Sachdev ‘581 discloses an epoxy-based adhesive suitable for use in semiconductor manufacturing. With respect to polymer additives, Sachdev ‘581 discloses:

[t]he acrylate polymer optional co-additives to provide reworkable adhesive formulations include polyacrylates and polymethacrylates and polyalkyl acrylates and polyalkyl methacrylates such as poly(n-butylacrylate and/or n-butylnmethacrylate), poly(n-fluorobutyl methacrylate), and polymethyl methacrylate. In general, the alkyl group may be about C1-C8, preferably C2-C4. The acrylate polymer is preferably miscible in the adhesive formulation.

Sachdev ‘581 at column 5, line 64 to column 6, line 4. Further, in claim 5, Sachdev ‘581 similarly discloses:

...

... an additive to the composition wherein the additive enables the bonded components to be reworked without the need for solvents which additive is selected from the group consisting of polyacrylate, poly(meth)acrylate, polyalkylacrylate and polyalkylmethacrylate, polyfluoro alkyl acrylate and polyfluoroalkyl methacrylate wherein the alkyl group is C1-C8.

In the cited passages, as well as in the remainder of the claims and specification, Sachdev ‘581 fails to disclose the elements recited in claim 1, as amended, of “oligomeric ABA-glycidyl

methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof'.

Sachdev '581 fails to disclose each and every feature of claim 1, as amended (as well as claims 3, 6, 7, 14, 15, 17, and 18 depending from claim 1). Accordingly, it is respectfully requested that the rejection of claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. § 102(b) be withdrawn.

Claim Rejections – 35 U.S.C. § 102/103 – claims 1, 3, 6, 7, 14, 15, 17, and 18

The Examiner has rejected claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over, U.S. Patent No. 6,548,175 (Sachdev *et al.*, hereinafter "Sachdev '175"). In view of the amendment of claim 1, Applicants respectfully traverse these rejections of claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. §102(b) / 35 U.S.C. §103(a).

Sachdev '175 discloses epoxy-siloxane based adhesives suitable for use in semiconductor manufacturing. With respect to polymer additives, Sachdev '175 discloses:

[t]he acrylate polymer optional co-additives to provide reworkable adhesive formulations include polyacrylates and polymethacrylates and polyalkyl acrylates and polyalkyl methacrylates such as poly(n-butylacrylate and/or n-butylmethacrylate), poly(n-fluorobutyl methacrylate), and polymethyl methacrylate. In general, the alkyl group may be about C1-C8, preferably C2-C4. The acrylate polymer is preferably miscible in the adhesive formulation.

Sachdev '175 at column 6, lines 49-67. Further, in claim 5, Sachdev '581 similarly discloses:

...
an additive to the composition wherein the additive enables the bonded components to be reworked without the need for solvents which additive is selected from the group consisting of polyacrylate, poly(meth)acrylate, polyalkylacrylate and polyalkylmethacrylate, polyfluoro alkyl acrylate and polyfluoroalkyl methacrylate wherein the alkyl group is C1-C8.

In the cited passages, as well as in the remainder of the claims and specification, Sachdev ‘175 fails to disclose the elements recited in claim 1, as amended, of “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof.”

Relative to the rejection under 35 U.S.C. §102(b), Sachdev ‘175 fails to disclose each and every feature of claim 1, as amended (as well as claims 3, 6, 7, 14, 15, 17, and 18 depending from claim 1). Accordingly, it is respectfully requested that the rejection of claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. § 102(b) be withdrawn.

Relative to the alternative rejection under 35 U.S.C. §103(a), when making a rejection under 35 U.S.C. §103, the Examiner has the burden of establishing a *prima facie* case of obviousness. The Examiner satisfies this burden only by showing: (1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, (2) a reasonable expectation of success, and (3) the prior art references much teach or suggest all of the claim limitations (see MPEP 706.02(j)). The teaching or suggestion to make the claim combination and reasonable expectation of success must be found in the prior art and not from the applicant’s disclosure (see MPEP 706.02(j)).

There is no teaching or suggestion found in Sachdev ‘175 to expand the disclosed list of polymer additives to include “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” as is recited in claim 1, as amended. It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1, as amended (as well as claims 3, 6, 7, 14, 15, 17, and 18 depending from claim 1). Accordingly, it is respectfully requested that the alternative rejection of claims 1, 3, 6, 7, 14, 15, 17, and 18 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections – 35 U.S.C. § 103 – claims 4, 5, 8, 12, and 13

The Examiner has rejected claims 4, 5, 8, 12, and 13 under 35 U.S.C. §103(a) as unpatentable over Sachdev ‘581. In view of the amendment of claim 1, Applicants respectfully traverse these rejections of claims 4, 5, 8, 12, and 13 under 35 U.S.C. §103(a).

Relative to the rejection of claims 4, 5, 8, 12, and 13, the relevant subject matter “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” recited in claim 1, as amended, is not disclosed by Sachdev ‘581. Moreover, there is no teaching or suggestion found in Sachdev ‘581 to expand the list of polymer additives it does disclose to include “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” as is recited in claim 1, as amended. It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1, as amended, as well as claims 4, 5, 8, 12 and 13 depending directly or indirectly from claim 1.

Accordingly, it is respectfully requested that the rejection of claims 4, 5, 8, 12, and 13 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections – 35 U.S.C. § 103 – claim 8

The Examiner has rejected claim 8 under 35 U.S.C. §103(a) as obvious over Sachdev ‘175. In view of the amendment of claim 1, Applicants respectfully traverse this rejection of claim 8 under 35 U.S.C. §103(a).

The relevant subject matter “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” recited in claim 1, as amended, is not disclosed by Sachdev ‘175. Moreover, there is no teaching or suggestion found in Sachdev ‘175 to expand the list of polymer additives it does disclose to include “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” as is recited in claim 1, as amended. It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1, as amended, as well as claim 8 depending from claim 1.

Accordingly, it is respectfully requested that the rejection of claim 8 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections – 35 U.S.C. § 103 – claims 9-11

The Examiner has rejected claims 9-11 under 35 U.S.C. §103(a) as obvious over Sachdev ‘581 or Sachdev ‘175 in view of U.S. Patent No. 6,977,025 (McArdle *et al.*, hereinafter “McArdel”). In view of the amendment of claim 1, Applicants respectfully traverse these rejections of claims 9-11 under 35 U.S.C. §103(a).

McArdle is directed to a method of forming a monolayer of substantive particles having a particle size on at least one dimension thereof of at least 1 micrometer and being in two or more groups of different sizes. McArdle also provides a method of forming a monolayer of substantive particles in a non-random array where the curable composition comprises a ferrofluid composition.

Assuming *arguendo* that McArdle is properly combinable with either Sachdev ‘581 or Sachdev ‘175 under 35 U.S.C. §103, the relevant subject matter recited in claim 1 of “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” is not disclosed by Sachdev ‘581, Sachdev ‘175, or McArdle, either individually or in the proposed combination. Moreover, there is no teaching or suggestion found in Sachdev ‘581, Sachdev ‘175, or McArdle to expand the list of polymer additives disclosed by the references to include “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” as is recited in claim 1, as amended. It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claim 1, as amended, as well as claims 9-11 depending from claim 1. Accordingly, it is respectfully requested that rejection of claims 9-11 under 35 U.S.C. § 103(a) be withdrawn.

Claim Rejections – Double Patenting – claims 1, 14, and 15

The Examiner has rejected claims 1, 14, and 15 on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-22 of Sachdev ‘581. Applicants respectfully traverse this rejection of claims 1, 14, and 15.

As discussed above, Sachdev ‘581 fails to teach, disclose, or suggest at least the features of “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated

poly(acrylonitrile-co-butadiene); and mixtures thereof’ recited in claim 1, as amended.

Applicants respectfully submit that claim 1 (as well as claims 14 and 15 depending from claim 1) is patentably distinct over claims 1-22 of Sachdev ‘581. Accordingly, Applicants respectfully request that rejection of claims 1, 14, and 15 on the ground of nonstatutory obviousness-type double patenting be withdrawn.

Claim Rejections -- Double Patenting – claims 3-8, 12, 13, 17, and 18

The Examiner has rejected claims 3-8, 12, 13, 17, and 18 on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-22 of Sachdev ‘581, in light of the specification. Applicants respectfully traverse these rejections of claims 3-8, 12, 13, 17, and 18.

As discussed above, Sachdev ‘581 fails to teach, disclose, or suggest at least the features of “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” recited in claim 1, as amended.

Applicants respectfully submit that claim 1, as well as claims 3-8, 12, 13, 17, and 18 depending from claim 1, are patentably distinct over claims 1-22 of Sachdev ‘581, in light of the specification. Accordingly, Applicants respectfully request that rejection of claims 3-8, 12, 13, 17, and 18 on the ground of nonstatutory obviousness-type double patenting be withdrawn.

Claim Rejections -- Double Patenting – claims 1, 14, and 15

The Examiner has rejected claims 1, 14, and 15 on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-15 of Sachdev ‘175. Applicants respectfully traverse these rejections of claims 1, 14, and 15.

As discussed above, Sachdev ‘175 fails to teach, disclose, or suggest at least the features of “oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof” recited in claim 1, as amended.

Applicants respectfully submit that claim 1 (as well as claims 14 and 15 depending from claim 1) is patentably distinct over claims 1-15 of Sachdev ‘175. Accordingly, Applicants respectfully

request that rejection of claims 1, 14, and 15 on the ground of nonstatutory obviousness-type double patenting be withdrawn.

Claim Rejections – Double Patenting – claims 3, 6-8, 17, and 18

The Examiner has rejected claims 3, 6-8, 17, and 18 on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-15 of Sachdev '175, in light of the specification. Applicants respectfully traverse rejection of claims 3, 6-8, 17, and 18.

As discussed above, Sachdev '175 fails to teach, disclose, or suggest at least the features of "oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof" recited in claim 1, as amended. Applicants respectfully submit that claim 1, as well as claims 3, 6-8, 17, and 18 depending from claim 1, is patentably distinct over claims 1-15 of Sachdev '175, in light of the specification. Accordingly, Applicants respectfully request that rejection of claims 3, 6-8, 17, and 18 on the ground of nonstatutory obviousness-type double patenting be withdrawn.

Claim Rejections – Double Patenting – claims 9-11

The Examiner has rejected claims 9-11 on the ground of nonstatutory obviousness-type double patenting as unpatentable over claims 1-22 of Sachdev '581, or over claims 1-15 of Sachdev '175, in light of the specifications, and in view of McArdle. Applicants respectfully traverse rejection of claims 9-11.

As discussed above, Sachdev '581, Sachdev '175, and McArdle fail, both individually and in combination, to teach, disclose, or suggest at least the features of "oligomeric ABA-glycidyl methacrylate diester; oligomeric amine-terminated poly(acrylonitrile-co-butadiene); and mixtures thereof" recited in claim 1, as amended. Applicants respectfully submit that claim 1, as well as claims 9-11 depending from claim 1, is patentably distinct over claims 1-22 of Sachdev '581, claims 1-15 of Sachdev '175, in light of the specifications, and in view of McArdle. Accordingly, Applicants respectfully request that rejection of claims 9-11 on the ground of nonstatutory obviousness-type double patenting be withdrawn.

Application No. 10/709,518
Reply to Office Action of May 21, 2007

Allowable Subject Matter

Applicants acknowledge that claim 19 has been found to recite allowable subject matter, and would be allowable if rewritten to overcome an objection to the claim. In view of the Examiner's comments, claim 19 has been amended as discussed above.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1, 3-15, and 17-19, is in condition for allowance, and such action is respectfully requested.

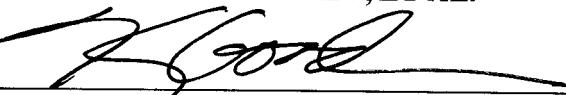
Respectfully submitted,

KRISHNA G. SACHDEV, ET AL.

July 11, 2007

By:

(Date)


KERRY GOODWIN
Registration No. 48,955
IBM CORPORATION
Dept. 18G
BLDG. 300-483
2070 Route 52
Hopewell Junction, NY 12533
Direct Dial: 845-892-9645
Facsimile: 845-892-6363
E-Mail: kerry.goodwin@us.ibm.com